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## Inside This Issue

### STATE-OF-THE-ART PAPER

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##### Consensus Statement on the Definition of On-Treatment Platelet Reactivity

2261

*Udaya S. Tantry, Laurent Bonello, Daniel Aradi, Matthew J. Price, Young-Hoon Jeong, Dominick J. Angiolillo, Gregg W. Stone, Nick Curzen, Tobias Geisler, Jurrien ten Berg, Ajay Kirtane, Jolanta Siller-Matula, Elisabeth Mahla, Richard C. Becker, Deepak L. Bhatt, Ron Waksman, Sunil V. Rao, Dimitrios Alexopoulos, Rossella Marcucci, Jean-Luc Reny, Dietmar Trenk, Dirk Sibbing, Paul A. Gurbel, for the Working Group on On-Treatment Platelet Reactivity*

Although platelet function testing (PFT) has been incorporated into the updated American and European practice guidelines to facilitate the choice of P2Y<sub>12</sub> receptor inhibitor in selected high-risk patients treated with percutaneous coronary intervention, routine testing is not recommended (Class III). Recent prospective randomized trials of PFT did not demonstrate clinical benefit of this strategy. Recent data also suggests that low on-treatment platelet reactivity is associated with a higher risk of bleeding. In this updated consensus document, Tantry and colleagues review the available evidence addressing the relation of platelet reactivity to thrombotic and bleeding events and propose cutoff values for high and low platelet reactivity that might be used in future investigations of personalized antiplatelet therapy.

### CLINICAL RESEARCH

#### INTERVENTIONAL CARDIOLOGY

##### Patient and Hospital Characteristics Associated With Inappropriate PCI

2274

*Paul S. Chan, Sunil V. Rao, Deepak L. Bhatt, John S. Rumsfeld, Hitinder S. Gurm, Brahmajee K. Nallamothu, Matthew A. Cavender, Kevin F. Kennedy, John A. Spertus*

Chan and colleagues analyzed data from the National Cardiovascular Data Registry CathPCI Registry to determine whether certain patient demographics and/or insurance statuses are associated with the rate of inappropriate percutaneous coronary intervention (PCI). The appropriateness of PCI was determined using appropriate use criteria for over 200,000 patients; 12% were classified as inappropriate. After multivariable adjustment, male and white patients were more likely to undergo an inappropriate PCI. Compared with privately-insured patients, those with Medicare, other public insurance, and no insurance were less likely to undergo an inappropriate PCI. These results suggest that previous research showing lower rates of PCI in women and minorities may not represent underuse, but rather less inappropriate use.

*Editorial Comment: Karen E. Joynt, p. 2282*

(continued on page A-34)

## CARDIOMETABOLIC RISK

**Allopurinol Reduces LVH in Type 2 Diabetes Mellitus****2284**

*Benjamin R. Szwejkowski, Stephen J. Gandy, Sushma Rekbraj, John G. Houston, Chim C. Lang, Andrew D. Morris, Jacob George, Allan D. Struthers*

Szwejkowski and colleagues performed a randomized, double-blind trial to ascertain whether high-dose allopurinol regresses left ventricular mass (LVM) in patients with type 2 diabetes mellitus and left ventricular hypertrophy (LVH). Allopurinol 600 mg/day or placebo was given for 9 months. Allopurinol significantly reduced absolute LVM and LVM indexed to body surface area, as calculated by cardiac magnetic resonance imaging. The authors speculate that allopurinol reduces oxidative stress in the ventricle and that this is the mechanism for the reduction in LVM.

*Editorial Comment: Nathaniel Reichel, p. 2294*

## CARDIOMETABOLIC RISK

**Weight Loss and Vascular Health****2297**

*Sherman J. Bigornia, Melissa G. Farb, Stephanie Tiwari, Shakun Karki, Naomi M. Hamburg, Joseph A. Vita, Donald T. Hess, Michael P. LaValley, Caroline M. Apovian, Noyan Gokce*

Bigornia and colleagues studied whether the effects of weight loss on arterial function are modified by insulin levels. Plasma metabolic parameters and vascular endothelial function were assessed at baseline and following weight loss intervention in obese and overweight individuals. In individuals with higher baseline plasma insulin levels, >10% weight loss (compared with <10%) significantly improved brachial artery macrovascular flow-mediated vasodilation and microvascular reactive hyperemia. In contrast, vascular function did not change significantly in the lower insulin group despite a similar degree of weight loss. These findings suggest that reversal of insulin resistance and endothelial dysfunction may be mechanistically intertwined.

*Editorial Comment: Todd J. Anderson, p. 2306*

**HEART FAILURE****Race/Ethnicity and Panel Reactive Antibodies on Transplant Outcome****2308**

*Alanna A. Morris, Robert T. Cole, Emir Veledar, Naveen Bellam, S. Raja Laskar, Andrew L. Smith, Howard M. Gebel, Robert A. Bray, Jarved Butler*

Panel reactive antibody (PRA) screening is used to determine the presence of pre-formed antibodies to population-wide human leukocyte antigens. Patients with higher PRA values tend to have extended waiting times while listed for solid organ transplant. Morris and colleagues reviewed information in the Organ Procurement and Transplantation database to study whether race or ethnicity affect PRA levels. Blacks had a higher peak PRA than all other groups and were more likely to be sensitized. Black heart transplant recipients were more likely to experience graft failure than Hispanic, white, or Asian recipients. These results show that race/ethnicity and level of sensitization are important predictors of graft survival.

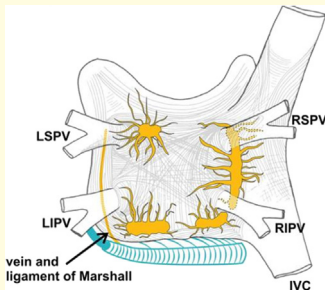
*Editorial Comment: Sean P. Pinney, p. 2316*

**HEART RHYTHM DISORDERS****Pulmonary Vein Isolation and Autonomic Denervation****2318**

*Demosthenes G. Katritsis, Evgeny Pokushalov, Alexander Romanov, Eleftherios Giazitzoglou, George C. M. Siontis, Sunny S. Po, A. John Camm, John P. A. Ioannidis*

Katritsis and colleagues investigated whether the combination of conventional pulmonary vein isolation (PVI) and ganglionated plexi (GP) modification in a single ablation procedure yields higher success rates than PVI or GP ablation alone. A total of 242 patients with symptomatic paroxysmal atrial fibrillation (PAF) were recruited and randomized to either circumferential PVI, anatomic ablation of the main right and left atrial GP, or circumferential PVI followed by anatomic ablation of the 4 major atrial GP. Freedom from atrial fibrillation or other sustained atrial tachycardia was higher in the PVI+GP group. Addition of GP ablation to PVI confers a significantly higher success rate compared with either PVI or GP alone in patients with PAF.

*Editorial Comment: Aman Chugh, p. 2326*



## CARDIAC IMAGING

**Aortic Stenosis Severity Grading With MDCT****2329**

*Marie-Annick Clavel, David Messika-Zeitoun, Philippe Pibarot, Shivani R. Aggarwal, Joseph Malouf, Phillip A. Araoz, Hector I. Michelena, Caroline Cueff, Eric Larose, Romain Capoulade, Alec Vahanian, Maurice Enriquez-Sarano*

Clavel and colleagues hypothesized that the extent of aortic valve calcification (AVC) detected by multidetector computed tomography (MDCT) would correlate with the severity of aortic valve stenosis using Doppler echocardiography. A total of 646 patients with aortic stenosis (AS) underwent Doppler echocardiography and AVC measurement by MDCT. Mean transvalvular gradient (MG) was independently and strongly influenced by AVC. Among patients with AS, MG is often discordant from aortic valve area (AVA). The authors speculate that adding AVC may help to determine the severity of AS when there are discrepancies between MG and AVA.

*Editorial Comment: Marc R. Dweck, Calvin Chin, David E. Newby, p. 2339*